Financial KPIs for Sustainability : Evidence from Japanese Long-lived Firms

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Financial KPIs for Sustainability: Evidence from Japanese Long-lived Firms

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Abstract

The purpose of this study is to examine accounting features in long-lived firms to determine financial KPIs (Key Performance Indicators) leading to sustainability. The study analyzes the financial performance and quality of financial reporting and the value added distributions of Japanese listed long-lived firms. The results show these firms are managed based on long-term sustainability rather than on short-term profitability. In addition, long-lived firms' value added distribution ratios to three types of stakeholders (employees, creditors and governments), excluding shareholders, are high, which means these firms perform stakeholder management to forge a stable, mutually beneficial relationship. This study contributes to the empirical exploration of financial KPIs for sustainability: stability of profitability and value added distribution.

Keywords: Long-lived Firms, Japan, Profitability, Value Added Distribution, Sustainability

1. Introduction

Investors have recently become more short-term oriented. The mean duration of US equity holdings by investors was approximately seven years until the mid-1970s; however, by the time of the stock market crash in 1987, the average holding period had fallen to under two years, and it became approximately seven months by 2007. In the United Kingdom, the average duration of equity holdings fell from approximately five years in the mid-1960s to approximately two years in the 1980s, and by 2007, it had fallen to approximately 7.5 months. Asia is not immune to these trends. In the Shanghai Stock Exchange, the mean duration is close to six months, and 80-90% of trading is done by day traders. The trends are much the same across a wider set of international equity markets (Haldane 2010). These short-term oriented investments lead to corporate behaviors and firms' incentive structures to short-termism and also jeopardize the sustainability of the economy and society.

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One of the factors affecting these trends is that transaction costs in equity markets have fallen (Haldane 2010); financial reporting also promotes the trends. Therefore, currently, the necessity of changing investors' behaviors from short-termism to long-termism is being discussed, and the largest trend is of Integrated Reporting. International Integrated Reporting Council Chief Executive Paul Druckman said "in Japan, there is increasing interest and support for corporate reporting reform as part of a wider package of measures to reassert a focus on long-term investment and unlock corporate value." Actually, the number of long-lived firms with over 100 years of history in Japan is 33,069[1], which is the largest in the world. The number of long-lived firms over 200 years in the world is 5,586, and the breakdown of their locations is as follows: 3,146 in Japan, 837 in Germany, 222 in Netherland, and 196 in France[2]. This shows that over half of them are Japanese.

There are some external and internal reasons why Japan has many long-lived firms. The external reason is that, historically, there have been fewer invasions in Japan than in other countries. The internal reasons are that firms focus on their business strength, and on conducting business based on relationships of trust and responsibility, self-innovation, meritocratic succession, and so on. There are several studies exploring the reasons why there are many long-lived firms in Japan from a management and from a marketing perspective (e.g., Nomura 2006; Teikoku Databank 2009); however, accounting features of long-lived firms have not been investigated yet.

There are studies on family businesses, because most long-lived firms outside Japan are family businesses (Yokozawa 2012). Several studies on such businesses discuss the relation between family ownership and financial performance (Anderson and Reeb 2003; Lee 2006; Miller *et al*. 2007; Allouche *et al*. 2008); however, Colli (2012) shows there is no relation between a firm being a family business and long-lived. On the other hand many long-lived firms in Japan have been recognized as having a social and public existence that considers various stakeholders (Yokozawa 2012; Goto 2014), compared to long-lived firms in other countries (Galadanchi and Bakar 2018).

The purpose of this study is to investigate the accounting aspects of Japanese long-lived firms and the distribution of their value added, and to reveal their financial features. This study first analyzes the financial performance and the quality of financial reporting of Japanese long-lived firms that have been in business for over 100 years. Second, this study examines the distribution of long-lived firms' value added to their stakeholders. The remainder of this paper is organized as follows: Section 2 reviews previous studies related to long-lived firms, which examine their financial performance, quality of financial reporting,

1 Tokyo Shoko Research, Ltd. 2016. *Survey on Long-established Firms in Japan.*

2 Bank of Korea. 2008. *Survey and Discussion on Elements of Japanese Firms' Longevity.* YONHAP NEWS AGENCY, Rengo News, May 14th, 2008.

and relationship with stakeholders, and reveals the key research issues. Section 3 presents the data analysis and the results. Section 4 summarizes the results of the analysis and provides future research challenges.

2. Previous Research and Research Questions

2.1 Financial Performance

There are few studies examining the accounting aspects of long-lived firms, most studies focus on management or marketing aspects. For example, Teikoku Databank (2009) analyzes profitability of Japanese long-lived firms. The study shows long-lived firms perform better in terms of ordinary income ratio and suggests that they profit from their assets management by using long-held assets. However, most sampled firms in this analysis are non-listed firms, and non-consolidated accounting data is used, so that results using listed firms' and consolidated accounting data might be different.

Although there are few studies on long-lived firms in other countries, many such firms in other countries are family businesses, and several studies investigate family businesses, which is an approximate synonym for long-lived firms. The studies addressing the financial performance of family businesses present various results: the financial performance of family businesses is better than that of other firms (Lee 2006; Allouche *et al*. 2008), the relation between family holdings and firm performance is nonlinear (Anderson and Reeb 2003), and the superior financial performance is attributed to a particular governance variable (Miller *et al*. 2007). Mazzi (2011) indicates that the lack of homogeneity in the results of previous studies suggests that the relationship between family business and firm performance is complex, and studies on listed firms generally report that family ownership and control are positively and significantly related to accounting performance but have a less statistically robust association with market performance. Eventually, the survival rate of a family business is not high[3]. Although some studies exist regarding the impact of a family business succession on financial performance (e.g., Molly *et al*. 2010), it focuses on succession from the first to the second generation, and does not address long-term longevity. There are other studies showing that no relation exists between a family business and longevity (Colli 2012; Alayo *et al*. 2016).

A firm's longevity or sustainability is often treated similarly to corporate social responsibility (CSR). Many studies perform empirical research on the relationship between

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[3] Professor Joseph Astrachan, an editor of Family Business Review, indicates that more than 30% of all family-owned businesses survive into the second generation, 12% percent are still viable into the third generation, and 3% of all family businesses operate at the fourth-generation level and beyond. Conway Center for Family Business https://www.familybusinesscenter.com/resources/family-business-facts/ Accessed on November 25th, 2018.

corporate social and environmental performance and financial performance. These results in the last three decades are not consistent; however, in recent research, studies tend to conclude that a firm's social performance is related to its financial performance (Margolis and Walsh 2003; Orlitzky *et al*. 2003; Allouche and Laroche 2005; Beurden and Gössling 2008; Joo *et al*. 2010; Porter and Miles 2013; Saka and Noda 2013; Oshika *et al*. 2013; Saka and Oshika 2014). As regards the relationship between social and financial performance in a family business, there are studies showing that a higher ethical focus in a family business predicted a better financial performance (O'Boyle *et al*. 2010). There are also studies that show family businesses with a better financial performance are able to facilitate being environmental friendly than nonfamily competitors (Craig and Dibrell 2006).

Given the limitation that most samples analyzed in long-lived firms consisted of non-listed firms and that family businesses are not always long-lived firms, it is important to analyze listed long-lived firms to explore the potential financial KPIs (Key Performance Indicators) for capital market to lead long-term perspective. In addition, previous studies analyzing social and financial performance faced the methodology challenge of how to measure social performance (Ma 2006), and the issue that better social performance does not always provide longevity or sustainability. Therefore, this study focuses on listed long-lived firms that have survived longer than 100 years and analyzes these firms to reveal their financial features leading to their sustainability. The number of long-lived firms in Japan is much higher than in other countries, and some of them have extraordinary old foundations. Revealing financial features of Japanese long-lived firms can provide some insights for firm sustainability. The analysis focuses on the past decade, when Japanese firms faced a severe economic situation and had difficulty maintaining their sustainability, and reveals the financial KPIs of long-lived firms.

2.2 Quality of Financial Reporting

When we analyze the financial performance of long-lived firms, especially earnings, it is important to confirm the quality of financial reporting (i.e., that managers do not conduct earnings management) due to a possibility that managers have arbitrary control over the earnings. There are several studies examining the quality of financial reporting for family businesses; however, they consider the aspect of agency theory (Ali *et al*. 2007; Chen *et al*. 2008; Prencipe *et al*. 2008; Lin *et al*. 2016). There are also studies analyzing the relationship between CSR or corporate ethics and earnings management (Chih *et al*. 2008; Huang *et al*. 2008; Choi and Pae 2011; Hong and Andersen 2011; Kim *et al*. 2012). Their results show that socially responsible firms are less likely to manage earnings through discretionary accruals and to manipulate real operating activities. In this study, we confirm the quality of earnings; therefore, better financial performance of long-lived firms is not

attributed to earnings management.

2.3 Relationship with Stakeholders

The traditional definition of stakeholders is any group or individual who can affect or is affected by the achievement of the organization's objectives (Freeman 1984). The organizational perspective of stakeholder theory aims to explain the relationship between a firm and the stakeholders, and there are studies based on the stakeholder theory (e.g., Orij 2010; Boesso *et al*. 2013; Williams and Adams 2013). Stakeholder management is a series of actions taken by a firm's managers to manage the firm for the benefit of its stakeholders, to ensure their rights and obligations, and to establish and maintain a confidential relationship with its stakeholders (Freeman and Evan 1990; Fontaine *et al*. 2006). Stakeholder management is the issue of finding a way to incorporate and adjust to the interests of each stakeholder (Mitchell *et al*. 1997), which assures multiple and diverse stakeholder groups' interests are being coordinated in ways that lead to favorable outcomes consistent with their expectations (Boesso *et al*. 2013).

There are studies on family businesses based on stakeholder theory, analyzing financial and nonfinancial performance across multiple stakeholder categories (Zellweger and Nason 2008), and discussing market orientation and financial performance (Cabrera-Suárez *et al*. 2011). Several studies on employment in family businesses show evidence of lower levels of layoffs are related to their more employee- and community-friendly policies (Stavrou *et al*. 2007). Despite the role that family businesses play in maintaining employment stability during temporary market downturns, employment stability in family firms over the long run is tenuous (Lee 2006). However, there is no research on the relationship between sustainability and stakeholder management.

Firms that have achieved sustainability are long-lived firms. As a basis for the business attitude of long-lived firms, they highly value long-term relationships with stakeholders, including their consumers, employees, and business partners. Studies on the social aspects of long-lived firms in Japan often mention the traditional spirit of Omi merchants, "Sanpo-yoshi" (good for three parties: sellers, buyers, and society)[4]. Japanese firms also generally highly value "public benefit" or "public institutions for society"[5]. Therefore, these long-lived

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4 The spirit of "good for three parties" is also introduced as the CSR philosophy of Itochu Corporation, one of the largest and mostlong-established trading firms in Japan.

5 "Public benefit" is the word of Mr. Eiichi Shibusawa (1840-1931), a Japanese industrialist known as the "father of Japanese capitalism." "Public institutions for society" is famous as the management philosophy of Mr. Konosuke Matsushita, a founder of Panasonic Corporation, which has a 100-year history, and this philosophy is inherited by the present in the firm. In *Panasonic Sustainability Data Book 2018*, it is mentioned that "we will devote ourselves to the progress and development of society and the well-being of people through our business activitie."

firms conduct business with consideration to the benefits of all the stakeholders (Yokozawa 2012; Goto 2014). This attitude can be linked to the concept of value added in the light of accounting aspects.

Value added measures how much input a firm has invested in its business activities to produce output and represents how effectively the firm utilizes this input. Since The Corporate Report (ASSC 1975), much research has been conducted on value added (e.g., Meek and Gray 1988; Aldama and Zicari 2012). One of the reasons why value added has attracted such attention is that firms pursuing only profit have caused environmental pollution, unemployment, and other social problems, which have a negative impact on societal sustainability. Therefore, value added has been researched as an index of the aspects of a firm's performance that profit alone cannot express. Recently, profitability indicators have been emphasized in investment decisions as indexes calculating the profitability of investor capital. In a case where financial capital is the only input and profit is the only output, profitability would be a suitable measure of efficiency. However, as firms' inputs usually include various management elements in addition to financial capital, it is inappropriate to regard profit as the only output. It is necessary to consider the fact that a firm is a social organization involving not only shareholders but also various stakeholders. Profits used for evaluating profitability are a part of value added. Value added is the simplest, most immediate way of putting profit into perspective vis-à-vis the whole enterprise in terms of capital and the collective effort of the employees and management (e.g., ASSC 1975; Meek and Gray 1988). Therefore, given that a firm is a social entity inevitably involving both shareholders and various other stakeholders, we need a more comprehensive analysis based on value added, in addition to profit (Oshika and Saka 2017).

The concept of value added involves two aspects: productive and distributional[6]. From the productive aspect, a firm's value added can be measured by subtracting the value of materials and services purchased from other firms from the value of goods it has produced. This measurement excludes the contribution of other producers in the total value created by the firm, and this is the firm-focused performance aspect. From the distributional aspect, a firm's value added can be measured by adding the remuneration of the productive factors, that is, the labor of the employees, the capital of the creditors and shareholders, and the social capital of the community (the government and society). These four stakeholders are identified in Freeman's (2004) study. Further, the distributional aspect of value added

6 The productive aspect is calculated as follows: Total value added = Value of goods produced − Value of materials and services purchased from other firms. The distributional aspect is calculated as follows: Total value added = Portion distributed to employees + Portion distributed to creditors + Portion distributed to shareholders + Portion distributed to the community (government and society)

indicates how the value created has been distributed among stakeholders in the form of wages, interest, dividends, and taxes to compensate those who contributed to its creation (Riahi-Belkaoui 1999), and this is the society-focused aspect (ASSC 1975; Meek and Gray 1988; Aldama and Zicari 2012; Haller and van Staden 2014; Oshika and Saka 2017). Theoretically, the proportion of value added from these two aspects should yield equal results. This means that value added represents the value created by the firm through its business activities and, at the same time, the value distributed to the stakeholders of the firm.

This study uses the distributional aspect as a proxy for value added, which shows the society-focused aspect of firms and how the created value of a business's efforts are shared among its stakeholders (Riahi-Belkaoui 1999; Haller and van Staden 2014). Oshika and Saka (2017) conduct a worldwide analysis of financial features of listed long-lived firms; however, the analysis does not have a large enough sample of Japanese firms because of unavailability of labor costs data. Japan has the largest number of long-lived firms. In addition, these firms have prioritized the employee, customer, and general public welfare, and the value they produce is shared across the various stakeholders (Goto 2014). Therefore, this study focuses on listed Japanese long-lived firms using different data sources to obtain labor costs, which are a part of the value added distributed to employees, and reveals the financial features of Japanese long-lived firms. Through the analyses, we find the financial KPIs important in a long-term perspective and for sustainable stakeholder management.

3. Data and Results of Analyses

3.1 Data

In this study, we have used the *Survey on Long-established Firms Database* issued by Tokyo Shoko Research, Ltd., to extract the firms that are 100 years old or older (hereafter, long-lived firms). The number of long-lived firms listed in the Japanese stock exchanges is 469, which represents 13.2% of all listed firms (3,640 firms as of November 2018). Of these 469 firms, 322 (68.7%) are listed in the 1st section of the Tokyo Stock Exchange, 57 (12.1%) in its 2nd section, 48 (10.2%) in other local exchanges, and 42 (8.9%) in JASDAQ. We used the *Nikkei NEEDS-Financial Quest* database to extract financial and stock price data. We defined "other firms" to be all other listed firms younger than 100 years old. We excluded the firms in the bank, insurance, and securities sectors and other financial institutions from our sample. We limited our sample to the firm-year with a March fiscal end and a fiscal period of 12 months.

3.2 Financial Performance of Long-lived Firms

An analysis of the Teikoku Databank (2009) on long-lived firms may have a misleading conclusion as the analyses used averages. Given that financial numbers are usually skewed, that is, they have a long tail, averages might not be representative of the sample. The result of a study on non-listed family businesses (Sciascia and Mazzola 2008), which could not find any financial characteristics of a family business, may be due to the skewness of financial data. Although the focus of this study is listed firms, there still exists a possibility to contaminate or mislead the empirical results if we use averages. Therefore, we use Wilcoxon's rank-sum test to observe the differences of medians between long-lived and other firms.

First, to examine characteristics of the profitability of long-lived firms, we use gross margin over sales, operating profit ratio over sales, ordinary income (which is similar to income before extraordinary items) ratio over sales, net income ratio over sales, ROE (net income divided by total shareholders' equity), and two kinds of ROA (ordinary income or net income divided by total assets). Empirical analyses were conducted using 10 years of data between March 2003 and March 2012. As shown in Table 1 and Figure 1, for all the ratios mentioned above, we observed that long-lived firms show smaller profitability, which

Table 1. Profitability of long-lived and other firms

		Mean	SD	Min.	Q1	Median	Q3	Max.	Wilcoxon(two-sides)
Gross margin	Other firm	0.266	0.253	-16.335	0.152	0.229	0.337	1.000	-16.649 ***
	Long-lived firms	0.222	0.148	-0.434	0.123	0.188	0.273	0.857	
Operating profit ratio	Other firms	0.021	0.976	-92.571	0.018	0.043	0.080	0.983	-6.452 ***
	Long-lived firms	0.045	0.064	-0.870	0.018	0.037	0.064	0.470	
Ordinary income ratio	Other firms	0.021	0.842	-72.143	0.017	0.042	0.079	0.913	-8.376 ***
	Long-lived firms	0.043	0.066	-0.913	0.016	0.034	0.061	0.536	
Net income ratio	Other firms	-0.013	0.839	-72.286	0.006	0.021	0.044	1.622	-7.355 ***
	Long-lived firms	0.017	0.073	-1.740	0.005	0.016	0.034	0.820	
ROE	Other firms	0.048	1.170	-66.500	0.016	0.051	0.103	115.818	-5.201 ***
	Long-lived firms	-0.052	4.446	-239.250	0.016	0.045	0.085	29.895	
ROA(Ordinary income)	Other firms	0.066	1.348	-4.767	0.019	0.044	0.081	118.756	-14.144 ***
	Long-lived firms	0.039	0.042	-0.028	0.016	0.033	0.055	0.374	
ROA(Net income)	Other firms	0.028	0.825	-4.783	0.006	0.022	0.046	114.090	-11.732 ***
	Long-lived firms	0.017	0.040	-0.038	0.005	0.016	0.031	0.486	

*** Coefficients are significant at 1% levels.

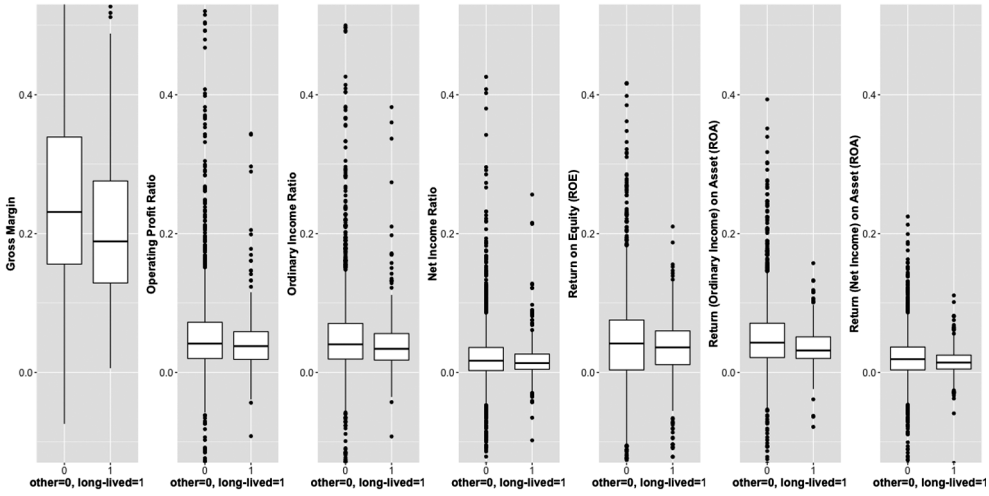

Figure 1. Profitability of long-lived and other firms

is statistically significant[7]. These results are different from those of the Teikoku Databank (2009), which insisted that long-lived firms derive their strength from high profitability.

Next, we compare the stability of profitability in long-lived firms to that in the other firms. We calculate the 10-year standard deviation for each profitability measure (i.e., gross margin, operating profit ratio, ordinary income ratio, net income ratio, ROE, and two ROAs). The empirical results show that the long-lived firms have statistically significant smaller standard deviations than those of the other firms. Table 2 and Figure 2 show the results.

Using a Chi-squared analysis, we also compare the proportion of long-lived firms that achieved a positive income to that of the other firms. The two variables in the analysis are positive income versus negative income, and long-lived firms versus the other firms. The results, shown in Table 3 and Figure 3, suggest that the proportion of long-lived firms with a positive (negative) income is greater (lower) than that of the other firms. The results are consistent when using operating profit, ordinary income, or net income.

Together, these results suggest that long-lived firms pursue not large but stable profits, and, therefore, long-term sustainability rather than short-term profit. Note that our results on the relationship between each profitability measure and longevity do not indicate any causal

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7 Because of the limited space, Table 1 and Figure 1 show the empirical results based on the pooled 10-year data. The empirical results on yearly-divided data are similar to the results presented, except for the significance levels. The number of observations in each year range from 3,182 to 3,215 firm-years for the longevity firms, and from 19,545 to 19,851 firm-years for the other firms (the differences among years are due to missing values).

Table 2. Stability of profitability of long-lived and other firms

	Gross margin	Operating profit ratio	Ordinary income ratio	Net income ratio	ROE	ROA(Ordinary income)	ROA (Net income)
Other firm	0.022	0.023	0.024	0.024	0.061	0.027	0.025
Long-lived firms	0.017	0.017	0.017	0.019	0.045	0.017	0.018
Wilcoxon (two-sides)	-5.360 ***	-6.980 ***	-6.434 ***	-4.661 ***	-4.037 ***	-9.635 ***	-8.081 ***

*** Coefficients are significant at 1% levels.

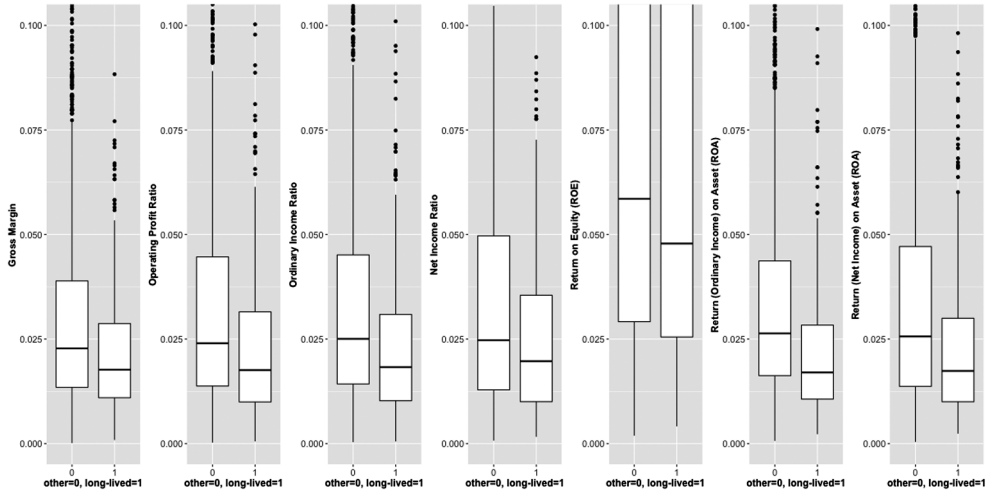

Figure 2. Stability of profitability of long-lived and other firms

Table 3. Proportion of long-lived and other firms with a positive income

		Other firms	Long-lived firms	
Operating profit	Negative income	2,189	218	2,407
	Positive income	17,666	2,995	20,661
		19,855	3,213	23,068

χ^2=52.745 ***

		Other firms	Long-lived firms	
Ordinary income	Negative income	2,272	249	2,521
	Positive income	17,578	2,964	20,542
		19,850	3,213	23,063

χ^2=38.423 ***

		Other firms	Long-lived firms	
Net income	Negative income	3,561	509	4,070
	Positive income	16,289	2,704	18,993
		19,850	3,213	23,063

χ^2=8.229 ***

*** Coefficients are significant at 1% levels.

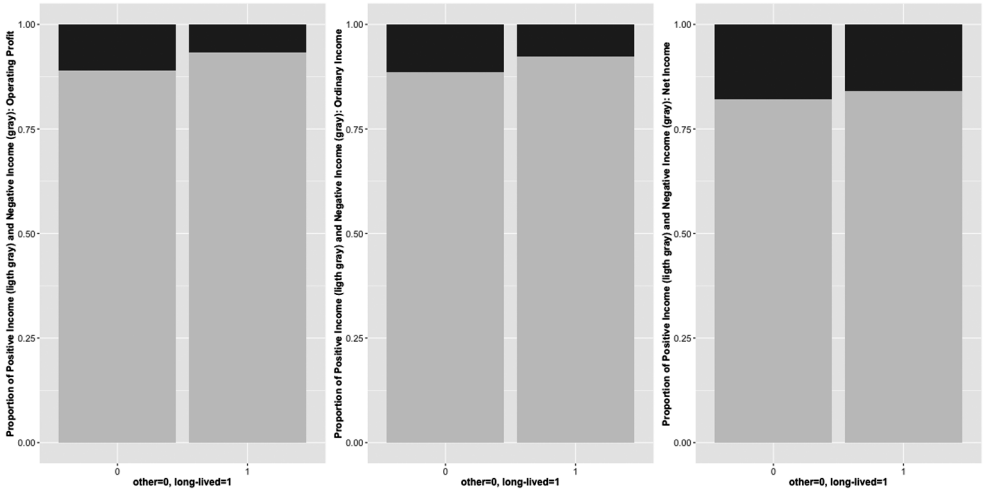

Figure 3. Proportion of long-lived and other firms with a positive income

effects. We need more deliberate discussion on why stable profitability will lead to longevity (or the other way around).

3.3 Quality of Financial Reporting in Long-lived Firms

Although we used income numbers in our analyses in the previous section, under accrual accounting, income numbers can be managed by the firms' management, at least to some degree. In light of that, the observed stability of profitability can be an artifact of earnings management, especially earnings smoothness. To detect if earnings management exists, we calculate discretionary accruals based on the model by Kasznik (1999), the CFO Modified Jones model, and compare the differences between the long-lived firms and the other firms.

We observed that the absolute value of discretionary accruals is smaller (i.e., earnings are less managed) in the long-lived firms than the other firms, as shown in Table 4. The difference is statistically significant. Therefore, we may conclude that the long-lived firms' stability of profitability is not due to earnings management, but rather a result of

Table 4. Discretionary accruals of long-lived and other firms

		Mean	SD	Min.	Q1	Median	Q3	Max.	Wilcoxon(two-sides)
Discretionary accruals	Other firm	0.036	0.060	0.000	0.009	0.021	0.042	4.178	-11.020 ***
	Long-lived firms	0.026	0.033	0.000	0.008	0.017	0.033	0.481	

*** Coefficients are significant at 1% levels.

management attitude.

3.4 Stakeholder Management in Long-lived Firms

To achieve sustainability, it is important for a firm to forge a mutually beneficial relationship with its stakeholders. In this section, we survey how long-lived firms distribute their value added, to reveal their stakeholder management.

There are two calculation methods for value added: productive and distributional. This study employs stakeholder theory, and, therefore, adopts the distributional approach, which calculates value added as a total amount of distribution elements to each stakeholder[8]. This study categorizes important stakeholders into four groups: employees, creditors, governments, and shareholders. The basic elements include the distribution of labor costs to the firm's employees as compensation for their services, financial costs paid to the creditors including interest of bonds, income taxes distributed to national and local governments, and net income conclusively attributed to the shareholders as dividends or retained earnings. A depreciation cost, which is a cost allocation of a fixed asset, can be an element of value added (which is called gross value added). However, the fixed assets are purchased from outside the stakeholder group, just as materials and services are (Meek and Gray 1988); therefore, the net value added approach is favorable. In addition, this section focuses on a firm's four stakeholders that are identified in Freeman (2004); hence, the net value added approach is adopted.

In this study, the amount of value added distributed to employees (labor costs) is calculated as the average salary per employee multiplied by the number of employees. The amount of value added distributed to creditors is the amount of interest costs. The amount of value added distributed to national and local governments is the total amount of income taxes and income tax-deferred. The amount of value added distributed to shareholders is the amount of net income after taxes as a source of dividend. Based on the total amount of value added distributed to these four groups, the proportions distributed to labor, interest costs, taxation, and shareholders are calculated[9]. We compare each distribution ratio in long-lived firms to the respective ratio in other firms.

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8 Ohara (1997) surveys an actual case of added value accounting for firms listed on the 1st section of the Tokyo Stock Exchange and concludes that the number of firms adopting a distributional approach is larger than that of firms adopting a productive one.

9 This study does not include "taxes and dues" in administrative and general expenses to calculate value added due to a lack of data availability. Therefore, the total of the four distribution proportions for added value in Section 3.4 is 100%.

The empirical results, shown in Table 5 and Figure 4 indicate the medians of average distribution ratios of all observations in each year between 2006 and 2011 and suggest that the distribution ratios of other-than-shareholders (i.e., of labor costs, interest costs, and taxation) are greater in the long-lived firms. As a consequence, the distribution ratio of shareholders is smaller in long-lived firms. We do not statistically compare the difference due to the difficulty of making an assumption about the distribution.

As an additional test, we also calculate labor cost per capita. It is revealed that the labor cost per employee is higher in the long-lived firms. This result means that long-lived firms distribute more to their employees, not only overall, but also per employee. Furthermore, the growth rate (between 2006 and 2011) of both the average salary for all employees and average salary at 30 are higher in the long-lived firms.

In conclusion, our empirical results suggest that, in terms of value added distribution, long-lived firms contribute to share the value and co-exist with stakeholders. Their stakeholder management may build a mutually beneficial relationship among the stakeholders.

Table 5. Value added distribution ratios to stakeholders

	Distribution to employees	Distribution to creditors	Distribution to governments	Distribution to shareholders
Other firm	0.483	0.046	0.150	0.342
Long-lived firms	0.492	0.065	0.165	0.274

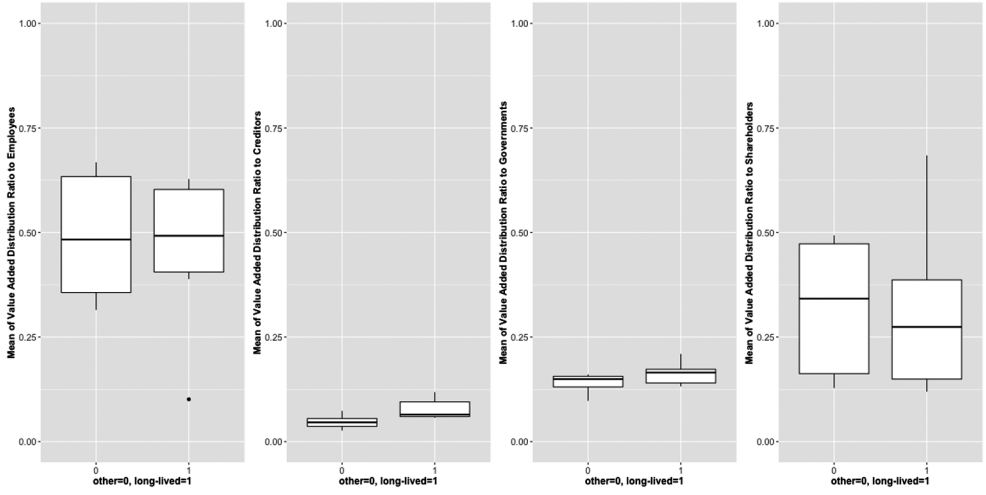

Figure 4. Value added distribution ratios to stakeholders

4. Conclusion

The purpose of this study is to examine the financial features of long-lived firms and their distribution patterns of value added among stakeholders to reveal their financial KPIs leading to sustainability, and to recommend to managers and investors to act based on a long-term perspective.

This study first analyzes the financial performance and quality of financial reporting of Japanese listed long-lived firms that have been in business for over 100 years. The results show that these firms' profitability ratios are low but stable, the proportion of such firms with deficits is low, and the stabilization of profitability ratios is not due to earnings management. Therefore, long-lived firms are managed based on long-term sustainability rather than short-term profitability. As regards the analysis of the distribution of value added to stakeholders in long-lived firms, the distribution ratios to three types of stakeholders, except for shareholders, are high. These firms exhibit continuous social contributions through their value added distributions and perform stakeholder management to forge a stable, mutually beneficial relationship with their stakeholders.

In Japan, there have been theoretical studies on value added accounting, and several firms have disclosed their value added information. However, there are few accounting empirical studies on value added. In the United States, several studies indicate that compared to profits or cash flow information, value added is useful and has superior explanatory power, lower variability, and higher persistency (e.g., Riahi-Belkaoui and Fekrat 1994; Riahi-Belkaoui and Picur 1994; Evraert and Riahi-Belkaoui 1998). Although there are still several topics that should be considered for further research, including an extension of the analysis period, an increase of the number of items to be analyzed, and an addition of analytic views, this study shows the evidences of financial features of long-lived firms which have already achieved sustainability, and contributes to the literature on the empirical exploration of financial KPIs for sustainability: the stability of profitability and value added distribution.

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